CORRELATION OF CD4 COUNT WITH CAROTID INTIMA MEDIA THICKNESS IN HIV PATIENTS

ABSTRACT:

Background:

HIV patients have increased risk of cardiovascular disease events . HIV-infected individuals may exhibit more rapid IMT(intima media thickness) progression in the carotid artery compared with uninfected individuals due to inflammatory state present in HIV infected . Low cd4 count has been identified as a risk factor but data has not been consistent as studies have not confirmed the reported associations of low CD4+ T-cell count with clinical or subclinical CVD.

Aim:

To investigate the correlation between CD4 count and CAROTID INTIMA MEDIA THICKNESS as a marker of atherosclerosis in HIV patients

Methods:

This was an observational study that included 100 HIV patients from medical wards and those attending OPD at ART center at Madras Medical College and Rajiv Gandhi Government General Hospital, Chennai . Patients selected for clinical study as per inclusion/exclusion criteria- demographic data ,past medical history , ART drug history ,duration of illness is collected from patients.CD4 T cell count is measured .Carotid artery intima media thickness is measured using B-mode ultrasound.

Results:

At p75 values of CIMT adjusted for age ,significant values ,p=0.015, are noted in age groups below 30 years and above 50 years. 54 % were males and

46 % were females and CIMT values at p75 distributed for the sexes was significant p=0.007,indicating that females had more significant increase in CIMT than males . Comparing age groups , significant at p75 , p =0.004 , patients on ART for 6-10 years had more CIMT values compared to other age groups.

The mean CD4 counts was found to be in decreasing trend with increasing percentile of CIMT . The count was 344, 323, 306 for p25 , p50 , p75 respectively and was significant with p value < 0.001 indicating a correlation between CD4 count and CIMT and it was found to have a negative correlation (the Correlation is significant at the 0.01 level (2-tailed) meaning that the CIMT values were increasing in trend when there was a fall in mean CD4 count. There was also a negative correlation between CIMT values and ART duration indicating that CIMT was more for patients who are on prolonged ART.

Conclusion:

It was found that HIV-infected patients with a low CD4+ T-cell count had a significantly increased carotid intima media thickness (CIMT) indicating that there is increased atherosclerosis in these immunocompromised group of patients. CIMT was increased in older age group , females than males and patients on prolonged ART. Further studies to reduce chronic inflammation beyond ART are required to investigate whether or not this improves vascular inflammation and ultimately reduces atherosclerotic risk in HIV patients.

KEYWORDS

HIV - Human Immunodeficiency Virus

AIDS - Acquired Immunodeficiency Deficiency Syndrome

ART - Antiretroviral Therapy

WHO - World Health Organization

CD - Cluster of Differentiation

ELISA - Enzyme Linked Immuno Sorbant Assay

CIMT - Carotid intima media thickness